

Title (en)

Cooled rotor blade

Title (de)

Gekühlte Rotorschaukel

Title (fr)

Aube de turbine refroidie

Publication

EP 1600605 B1 20150128 (EN)

Application

EP 05253262 A 20050527

Priority

US 85518804 A 20040527

Abstract (en)

[origin: EP1600605A2] A rotor blade (14) is provided that includes a root (20), a hollow airfoil (22), and a conduit (42) disposed within the root (20). The hollow airfoil (22) has a cavity defined by a suction side wall (38), a pressure side wall (36), a leading edge (32), a trailing edge (34), a base (28), and a tip (30). An internal passage configuration is disposed within the cavity. The configuration includes a first radial passage (48), a second radial passage (50), a rib (53) disposed between and separating the first radial passage (48) and second radial passage (50), a plurality of crossover apertures (52) disposed within the rib (53), and a plurality of trip strips (58) disposed within the first radial passage (48). The trip strips (58) are attached to an interior surface of one or both of the pressure side wall (36) and the suction side wall (38). The trip strips (58) are disposed within the first radial passage (48) at an angle \pm that is skewed relative to a cooling airflow direction (60) within the first radial passage (48), and positioned such that each of the plurality of trip strips (58) converges toward the rib (53). The rib end (62) of at least a portion of the plurality of trip strips (58) is located between a pair of adjacent crossover apertures (52). The conduit (42) is operable to permit airflow through the root (22) and into the first passage (48).

IPC 8 full level

F01D 5/18 (2006.01); **B63H 1/14** (2006.01); **F01D 5/14** (2006.01); **F02C 7/18** (2006.01)

CPC (source: EP US)

F01D 5/187 (2013.01 - EP US); **F05D 2250/30** (2013.01 - EP US); **F05D 2250/314** (2013.01 - EP US); **F05D 2260/22141** (2013.01 - EP US)

Cited by

EP1944469A3; EP2888462A4; EP2899370A1; EP3048255A1; US9726023B2; US9810073B2; WO2014031275A1

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